

REMARKS

Summary of the Office Action

Claim 1 stands objected to for a minor informality.

Claim 22 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 21-22 and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 6,215,246) (hereinafter "Kim") in view of Smith (WO 01/31081) (hereinafter "Smith") and Ito et al. (U.S. Publication No. 2002/0008817) (hereinafter "Ito").

Claims 24-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Smith and Ito as applied to claim 21, and further in view of Applicant's admitted prior art.

Claims 26-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Smith and Ito, as applied to claim 21, and further in view of Konishi (U.S. Patent No. 5,957,743) (hereinafter "Konishi").

Summary of the Response to the Office Action

This Preliminary Amendment includes all amendments and arguments that were presented in the Amendment filed on March 20, 2008 which was not entered, and adds new claim 30 and arguments relating thereto. In summary, Applicants have made minor editorial amendments to the specification, and have amended claims 21 and 22 and added new claim 30, to differently describe embodiments of the disclosure of the instant application's specification

and/or to improve the form of the claims. Accordingly, claims 1-22, 24-27 and 29 and 30 are currently pending with claims 21, 22, 24-27 and 29-30 currently under consideration.

Objection to Claim 1

Applicants understand this objection to be directed to claim 21, not claim 1.

Accordingly, claim 21 is being amended as suggested by the Examiner.

Rejection under 35 U.S.C. § 112, first paragraph

Claims 22 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to meet the written description requirement. This rejection is respectfully traversed. Nevertheless, to advance prosecution, claim 22 is being amended to include the words “a reduction in” before “intensity” as indicated.

In connection with the amendment to claim 22, Applicants compared the description of the present application with the specification of the basic Japanese application No. 2002-207686 and noticed that the word “reduction of” is missing in the description of the present application before the words “the intensity of (111) diffraction ray” on line 17 of page 17 of the present application. Similar instances exist on the last line of page 17 and line 19 of page 20 of the present application.

As described in the first paragraph of page 17 of the present application, the reduction in the intensity of (111) diffraction ray at an edge 3a of the substrate 3 should be kept as small as possible in order to assure stable characteristics of magnesium oxide film. Accordingly, the amendments to the specification and claim 22 are further supported based on the above

description and the relationship shown in Fig. 5 of the present application. No new matter is being added. Accordingly, the Examiner is respectfully requested to enter these amendments and withdraw the rejection.

Rejections under 35 U.S.C. 103(a)

Claims 21-22 and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Smith and Ito. Claims 24-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Smith and Ito and further in view of the Applicant's admitted prior art. Claims 26-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Smith and Ito as applied to claim 21, and further in view of Konishi.

The Examiner acknowledged that Smith does not explicitly teach a first line and a second line forming an angle equal to or smaller than 80 degrees, wherein the first line and the second line are respectively defined as a line connecting at least one of the evaporation sources located outside the display area to a point on the display area closest to the evaporation source and a line extending from the evaporation source in a direction parallel to a width of the substrate.

The Examiner, however, asserted that Smith does teach that uniformity of the layer is best achieved when placing a deposition source beyond the deposition area (pg. 17, lines 1-5 of Smith), and one of ordinary skill in the art would have expected any angle formed by the first and second line to have achieved the advantage of forming a uniform layer, so long as a deposition source is placed beyond the deposition area.

Applicants respectfully note that Smith shows, in Figs. 7 and 8, a plurality of trough crucibles 12 having a side wall 18 (such as a 15-inch length sidewall) longer than a substrate 24 (12-inch square substrate) to be coated (see lines 18-22 of page 10). Furthermore, lines 1-5 of page 17 of Smith read: “However, if a trough crucible 12 or hollow conduit type of material source 10 is used, uniformity is best achieved by making the sidewalls 18 (or the conduit) longer in a longitudinal direction SL than a width W2 of substrate 24.”

Since “SL” represents the length of the sidewalls 18 (line 14 of page 10 of Smith) Applicants consider that “L” should be described instead of “SL” in the paragraph reproduced above. The definition of axis L is described on lines 5-6 of page 10 of Smith.

Therefore, these lines (1-5 of page 17) of Smith are primarily concerned with the crucibles having a side wall extending along a longitudinal axis, such as crucibles 12 should in Fig. 7 and 8.

In claim 21 of the present application, the first line is defined as a line connecting any one of said two evaporation sources and an edge point on said display area closest to said one evaporation source. The second line is defined as a line parallel to a surface of said display area and perpendicular to said first direction (in which the passage extends).

Since the disclosure of Smith does not particularly relate to “display area” recited in claim 21, Applicants submit that the combination of the disclosure of Smith with the PDP making method of Kim as suggested by the Examiner would result in a structure that clearly lacks the claimed features of the present invention.

More importantly, Smith simply discloses a vacuum deposition apparatus that can form a uniform film of a deposition material on a substrate. However, the film uniformity (line 21 of

page 3 of Smith) referred to in Smith relates to the uniformity in thickness. Smith does not disclose nor suggest anything about the intensity of (111) diffraction of the protection film. Applicants further submit that Ito fails to make up for the deficiencies. Therefore, Applicants respectfully submit that the rejection of claim 22 based on Kim in view of Smith and Ito is unfounded.

Concerning the rejections of the dependent claims, Applicants further submit that the “admitted prior art” and Konishi fail to make up for the above deficiencies. Hence, all claims should be allowable.

Concerning newly added claim 30, this claim recites subject matter similar to that recited in claim 21. However, the limitation relating to “(1,1,1) alignment of the magnesium oxide” has been removed, and the angle (α) recited in the last paragraph is defined to be equal to or greater than 60 degrees and equal to or less than 80 degrees ($60^\circ \leq \alpha \leq 80^\circ$). The limitation of (1,1,1) alignment has been deleted because formation of the magnesium oxide having (1,1,1) alignment is an objective of the claimed method.

An example of the support for the angle α is as follows:

From the relationships shown in Figs. 4 and 5, it is understood that the intensity of the (111) diffraction ray (the relative intensity of (111) alignment) is saturated at the value of 1.4 (as depicted in Fig. 4) which occurs when the angle α between the first line and the second line is equal to 60 degrees (as depicted in Fig. 5).

The intensity of the (111) diffraction ray does not increase even if the angle α is decreased below 60 degrees. Instead, the position of the evaporation source would become more

outer-shifted when the angle is lowered below 60 degrees, so that the size of the fabricating apparatus would become larger.

Accordingly, it becomes possible to form a protection film having a uniform crystal alignment over the whole display area without excessively enlarging the size of the fabricating apparatus by selecting the angle α within the range of 60 degrees to 80 degrees. In this way, a protection film formed on the PDP substrate in accordance with the present invention has an improved uniformity, a good secondary electron emission characteristic, and an enhanced resistance to sputtering. This will result in an enlarged drive margin in the writing discharge, and increase in the speed of driving, and a prolonged lifetime.

The newly recited limitation relating to the position of the evaporation sources is neither disclosed nor suggested in the reference Smith.

CONCLUSION

In view of the foregoing discussion, Applicants respectfully request the entry of the amendments to place the application in clear condition for allowance or, in the alternative, in better form for appeal. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

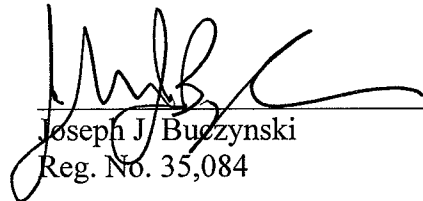
EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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